Magnetic Nanostructures, Interfaces, and New Materials: Theory, Experiment, and Applications

Organizers: Yves Idzerda, Steve Kevan, Elke Arenholz

The workshop will present recent results of research on magnetic materials using polarized synchrotron radiation with a focus on x-ray resonant scattering. The program of invited international speakers will present talks on new materials (including multifunctional oxides, ferromagnetic semiconductors, spin ladders), magnetic phenomena (coupled layers, interface disruption, magnetic tunnel barriers, magnetization dynamics), and advances in x-ray measurements applied to magnetic systems (diffuse X-ray resonant magnetic scattering, speckle, soft X-ray diffraction) at different synchrotron facilities. The workshop is designed to be strongly interactive, with time for discussion and interaction and is intended to bring together experts from different fields of magnetism research (synthesis of new materials, characterization of magnetic properties using synchrotron based and other techniques, modeling of magnetic phenomena) for an exciting exchange of views and ideas.

Tuesday, October 19th, 2004

10:15 – 10:20	Welcome
10:20 – 10:45	Sarnjeet S. Dhesi *Diamond Light Source, UK* New Adventures in Soft X-Ray Scattering
10:45 – 11:10	Christian Schuessler-Langeheine *Universitat zu Köln, Germany* Resonant Soft X-Ray Diffraction from Lanthanide Thin Films and Transition-Metal Compounds
11:10 – 11:35	Yves Idzerda *Montana State University* Quantifying Interface Disruption by X-ray Resonant Scattering
11:35 – 12:00	Jean-Marc Tonnerre *CNRS, Grenoble, France* Recent Results on Nanoscale Magnetic Systems from Soft X-Ray Resonant Magnetic Reflectivity at SLS
12:00 – 12:25	Peter Bencok *ESRF* Soft X-Ray Diffractometer at ESRF: Current Status
12:25 – 13:30	Lunch

13:30 - 13:55 Peter Abbamonte
BNL and Cornell University
Crystallization of Holes in the Spin Ladder of $Sr_{14}Cu_{24}O_{41}$

13:55 – 14:20 Jessica K. Thomas
Brookhaven National Laboratory
Soft X-Ray Resonant Scattering in Manganites: From Bulk Crystals to Thin Films

14:20 – 14:45 John W. Freeland
Advanced Photon Source
Full Bulk Polarization and Intrinsic Tunnel Barriers at the Surface of Layered Manganites

14:45 – 15:10 Thomas C. Schulthess
Oak Ridge National Laboratory
Computational Investigations of Magnetic Structures at Interfaces

15:10 – 15:25 Coffee Break

15:25 – 15:50 Gerrit van der Laan
Daresbury Laboratory, UK
Coherent Soft X-Ray Resonant Magnetic Scattering From Magnetic Nanostructures

15:50 – 16:15 Karine Chesnel
Advanced Light Source
Coherent Soft X-ray Magnetic Scattering

16:15 – 16:40 Larry Sorensen
University of Washington
New Lessons from Speckle Studies of Disordered Magnets

16:40 – 17:05 Josh Deutsch
UC Santa Cruz
Putting a spin on speckle: the twisted way magnets remember

17:05 – 18:00 Discussion

Wednesday, October 20th, 2004

8:30 – 8:55 R. Ramesh
UC Berkeley
Multifunctional Complex Oxide Heterostructures

8:55 – 9:20 Kevin W. Edmonds
University of Nottingham, UK
Ferromagnetic Semiconductors for Spintronics

9:20 – 9:45 Yuri Suzuki
UC Berkeley
TBA

9:45 – 10:00 Discussion

10:00 – 10:15 Coffee Break

10:15 – 10:40 Z.C. Qiu
UC Berkeley
Photoemission Study of Coupled Magnetic Layers

10:40 – 11:05 Kai Starke
Freie Universität Berlin, Germany
Soft X-ray Magneto-Optics of Lanthanides

11:05 – 11:30 Peter Fischer
LBNL
Transmission X-Ray Microscopy

11:30 – 11:55 Joachim Stöhr
Stanford Synchrotron Radiation Laboratory
Probing Magnetization Dynamics with Soft X-Rays

11:55 – 12:30 Discussion and Adjourn